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(54) Molding affixed with wedged divider track

(57) An elongated wedge shaped spline (1) can be used for joining work pieces in a dovetail joint. It can be used in joining a work piece, such as molding (5) in a dovetailed joint. An expansion track having a pair of spaced apart flanges (20) extending at a right angle from the front surface of the divider track (2) is first affixed to a surface. The wedge shaped spline (1) is positioned between and in abutment with the upper portion of the spaced apart flanges (20). A fan shaped mortise on the back surface of a work piece is positioned over the wedge shaped spline (1) between and abutting the upper portion of the spaced apart flanges (20). Pressure is applied on the front surface of the work piece for seating the work piece on the divider track (2), thereby forcing the wedge shaped spline (1) between the flanges (20) and spreading the flanges (20). The spread apart flanges (20) engage the side walls of the fan shaped mortise for joining the work piece in a dovetailed joint with the divider track (2).

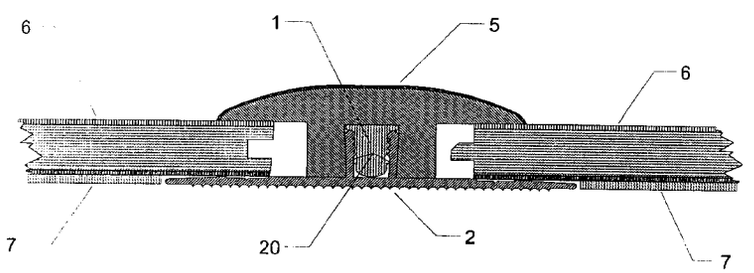

Figure 1

EP 0 839 974 A2

Description

This invention relates to the installation of molding with a wedge shaped spline and an aluminum divider track. This wedge shaped spline and installation method is particularly useful in the installation of laminate flooring.

Commercially available laminate flooring generally includes a wear surface glued to a substrate. The wear surface generally is high-wear resistant decorative laminate. The substrate generally is fiber board or particle board. Each piece of laminate flooring generally has a groove along one end and one side suitable for joining with a tongue along one side or end of an adjacent piece of laminate flooring. Laminate flooring is commercially installed over a pad.

Aluminum divider tracks are commercially used for the installation of flexible molding, such as vinyl molding. This includes the installation of expansion and transition molding, end caps and reducer strips. Divider tracks are affixed to a floor and a rib on the back of flexible molding is interlocked between a pair of flanges extending from the front of the divider track. Serrations extending along the rib and the interior surfaces of the flanges interlock for resisting the removal of the rib from the flanges, molding can be installed by interconnecting it with a divider track without penetrating its decorative front surface with fastening means or otherwise blemishing it.

There is a need in the installation of molding for securely affixing the molding without blemishing its decorative front surface. In the installation of laminate flooring, there is a need for molding covered with laminate that matches the pattern of the laminate flooring. There is a need for a method of installing laminate covered molding that does not blemish its decorative front surface.

It has now been discovered that an elongated wedge shaped spline can be used for joining work pieces in a dovetail joint. The spline is made of extruded rigid material in the shape of a wedge with serrations extending along the sloping sides of the wedge for interlocking with serrations extending along the interior surfaces of flanges extending at right angles from the front surface of a divider track. The wedge shaped spline has sufficient width between its sloping sides for spreading the flanges as the wedge shaped spline is forced between flanges on a divider track. The wedge shaped spline is wider at its top than at its bottom and can have sides slope inwardly at a angle of about 2-5 degrees and preferably about 2.5 degrees.

The wedge shaped spline of this invention can be used in joining a work piece, such as molding in a dovetailed joint. An expansion track having a pair of spaced apart flanges extending at a right angle from the front surface of the divider track is first affixed to a surface. The wedge shaped spline is positioned between and in abutment with the upper portion of the spaced apart flanges. A fan shaped mortise on the back surface of a work piece is positioned over the wedge shaped spline between and abutting the upper portion of the spaced apart flanges. Pressure is applied on the front surface of the work piece for seating the work piece on the divider track, thereby forcing the wedge shaped spline between the flanges ad spreading the flanges. The spread apart flanges engage the side walls of the fan shaped mortise for joining the work piece in a dovetailed joint with the divider track.

Serrations can extend along the lower portion of the sides of the wedge shaped spline for interlocking with serrations along the upper portion of the interior upper surfaces of the flanges without substantially spreading them for positioning the spline in the divider track as the fan-shaped mortise on the back surface of expansion molding is positioned over the wedge shaped spline.

In order that the present invention may be more readily understood and so that further features thereof maybe appreciated, the invention will now be described, by way of example, with reference to and as shown in the accompanying drawings, in which ;

Figures 1, 2, 3 and 6 are cross section views of a wedge shaped spline of the present invention used in the installation of an expansion joint between sections of laminate flooring;

Figures 4 and 5 are cross section views of serrations on a wedge shaped spline of the present invention interconnected with serrations on flanges of a divider track and the separation of the flanges as the spline is forced between the flanges;

Figure 7 shows the Metric and English dimensions of a specific embodiment of the elongated, wedge shaped spline of this invention; and

Figures 8 and 9 show the Metric and English dimensions of a specific embodiment or expansion molding and divider track that can be installed with the embodiment of a wedge shaped spline shown on Figure 7.

The use of the wedge shaped spline (1) of this invention for installing expansion molding (5) for laminate flooring (6) is shown on Figures 1-3, 6 and 8. The Wedge shaped spline (1) of this invention has spread the flanges (20) on an aluminum divider track (2) for securely interconnecting the molding and divider track with a dovetail joint, Figure 1. Laminate flooring (6) is installed over a pad (7).

The expansion molding (5) shown on Figures 1-3, 6, and 8 is laminate (8) wrapped fiberboard (9). Laminate can be bonded to other substrates, such as particleboard, wood of extruded plastic, for making molding or other work pieces. This expansion molding has a fan-shaped mortise (50) on its planar back side. This fan-

shaped mortise (50) has side walls that extend at a acute angle from a planar back surface of the expansion molding (5) for making a fan-shaped mortise (50) with its bottom being wider than the opening to the mortise at its top.

A pair of flanges (20) extend at right angles from the front planar surface of an elongated aluminum divider track (2), Figures 1-6 and 9. Serrations (21) extend along the interior upper surfaces of the flanges (20). Serrations (1 0) also extend along the sides of the elongated wedge shaped spline (1).

Serrations (10) along the lower portion of the sides of the wedge shaped spline (1) are shown as being interconnected with serrations (21) along the upper portion of the interior upper surfaces of the flanges (20) without substantially spreading them, Figures 2 and 4. This interconnection holds the spline in the divider track as the fan-shaped mortise (50) on the back surface of expansion molding (5) is positioned over the wedge shaped spline (1).

The top of the wedge shaped spline (1) of this invention is shown on Figure 3 in contact with the bottom surface of the wedge shaped mortise (50). As the expansion molding (5) is seated on the divider track (2), the wedge shape spline (1) is forced between the flanges (20), spreading them outwardly toward the side walls of the fan-shaped mortise, Figures 1, 3, 4 and 5. This joins the expansion molding (5) and divider track (2) with a dovetail shaped joint. The use of a dovetailed joint is considered as a very secure method of joining work pieces.

In the installation of expansion molding with the wedge shaped spline of this invention, the divider track (2) is first installed and the molding (5) is cut. Before positioning the wedge shaped spline in the divider track, the molding can be seated on the divider track for checking the fit of the molding, Figure 6.

The elongated wedge shaped spline of this invention and the divider track shown in the figures illustrating this invention can be made by extrusion molding metal, preferably aluminum, or rigid synthetic resin. The selection of suitable materials, methods and equipment for extrusion molding is known to those skilled in the art of making extruded molding.

A specific embodiment of the elongated, wedge shaped spline of this invention is shown on Figure 7. This embodiment of the wedge shaped spline of this invention can be used for the installation of elongated expansion molding shown on Figure 8 with elongated divider track shown on Figure 9. Dimensions shown on Figures 7-9 are in inches and centimeters.

The wedge shaped spline of this invention is wider at its top than at its bottom. In a preferred embodiment of this invention, the sides slope inwardly at an angle of about 2 to 5 degrees and most preferably at an angle of about 2.5 degrees. The wedge shaped spline of this invention is shaped and sized for spreading flanges on a divider track into engagement with the side walls of a mortise in a work piece. Excess pressure on the walls of the mortise could damage the work piece.

While the illustrative embodiments of the invention have been described with particularity, it will be understood that various other modifications will be apparent to and can be readily made by those skilled in the art without departing from the spirit and scope of the invention. Accordingly, it is not intended that the scope of the claims appended hereto be limited to the examples and descriptions set forth herein but rather that the claims be construed as encompassing all the features of patentable novelty that reside in the present invention, including all features that would be treated as equivalents thereof by those skilled in the art to which this invention pertains.

The features disclosed in the foregoing description, in the following claims and/or in the accompanying drawings may, both separately and in any combination thereof, be material for realising the invention in diverse forms thereof.

Claims

1. An elongated wedge shaped spline for joining work pieces in a dovetail joint, comprising; a spline of extruded rigid material in the shape of a wedge with serrations extending along the sloping sides of the wedge for interlocking with serrations extending along the interior surfaces of flanges extending at right angles from the front surface of a divider track and having sufficient width between its sloping sides for spreading the flanges as the wedge shaped spline is forced between flanges extending at right angles from the front surface of a divider track.

2. An elongated wedge shaped spline according to claim 1, wherein the wedge shaped spline is wider at its top than at its bottom and its sides slope inwardly at an angle of about 2 to 5 degrees.

3. An elongated wedge shaped spline according to claim 2, wherein the sides of the wedge shaped spline slope inwardly at an angle of about 2.5 degrees.

4. A method of joining a work piece in a dovetailed joint, comprising; affixing an expansion track having a pair of spaced apart flanges extending at a right angle from the front surface of the divider track to a surface, positioning a wedge shaped spline between and abutting the upper portion of the spaced apart flanges, positioning a fan shaped mortise on the back surface of a work piece over the wedge shaped spline between ad abutting the upper portion of the spaced apart flanges, and applying pressure on the front surface of the work piece for seating the work piece on the divider track,

thereby forcing the wedge shaped spline between the flanges and spreading the flanges, the spread apart flanges engaging the side walls of the fan shaped mortise for joining the work piece in a dove-tailed joint with the divider track.

5. A method according to claim 4, wherein serrations along the lower portion of the sides of the wedge shaped spline are interlocked with serrations along the upper portion of the interior upper surfaces of the flanges without substantially spreading them for positioning the spline in the divider track as the fan-shaped mortise on the back surface of expansion molding is positioned over the wedge shaped spline.

6. A method according to claim 5, wherein serrations extend along the interior upper surfaces of the flanges and along the sides of the elongated wedge shaped spline for interlocking the spline between the flanges.

7. A method according to any one of claims 4 to 6, wherein the wedge shaped spline is wider at its top than at its bottom and its sides slope inwardly at an angle of about 2 to 5 degrees.

8. A method according to claim 7, wherein the sides of the wedge shaped spline slope inwardly at a angle of about 2.5 degrees.

9. A method of according to any one of claims 4 to 8, wherein the fan shaped mortise has side walls that extend at a acute angle from a planar back surface of the expansion molding for making a fan-shaped mortise with its bottom being wider than the opening to the mortise at its top.

10. A method of any one of claims 4 to 9, wherein the workpiece is a molding.

11. A method according to claim 10, wherein the molding is laminate wrapped fiberboard.

12. A method according to claim 10, wherein the molding is laminate wrapped particleboard, wood or extruded plastic.

13. A method according to any one of claims 10 to 12, wherein the molding has a fan shaped mortise on its planar back side.

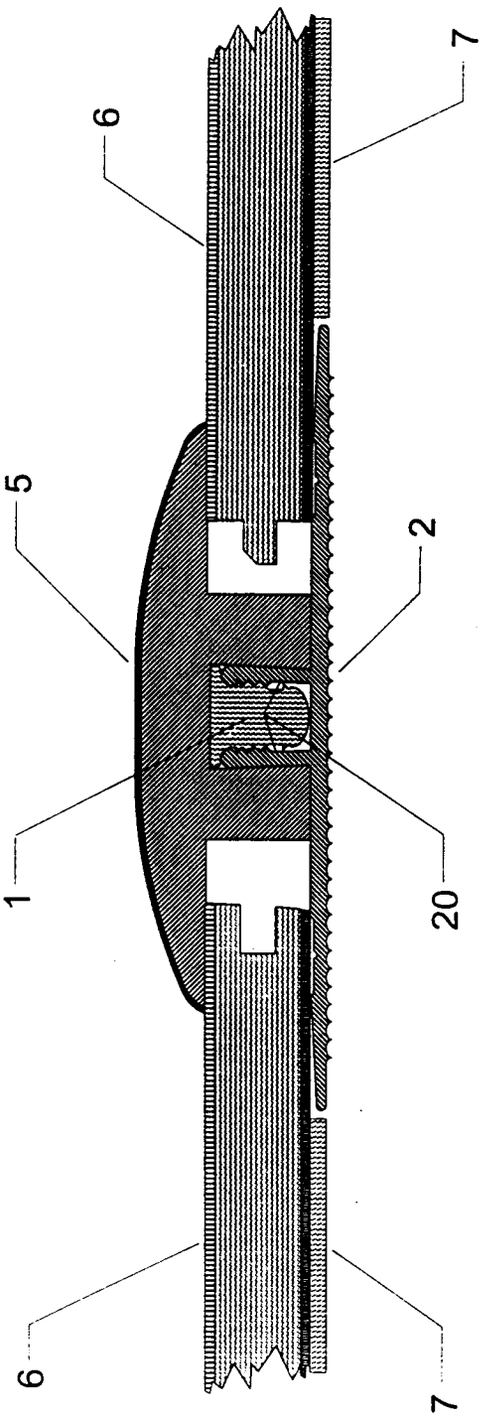

Figure 1

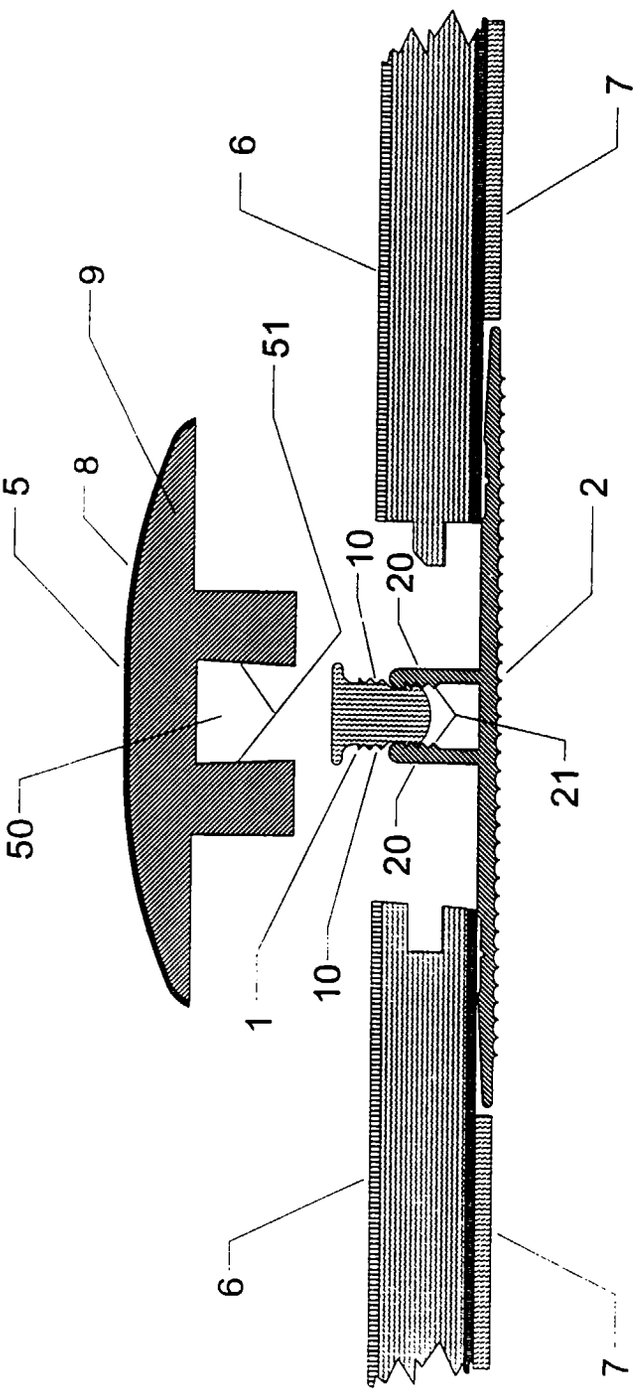

Figure 2

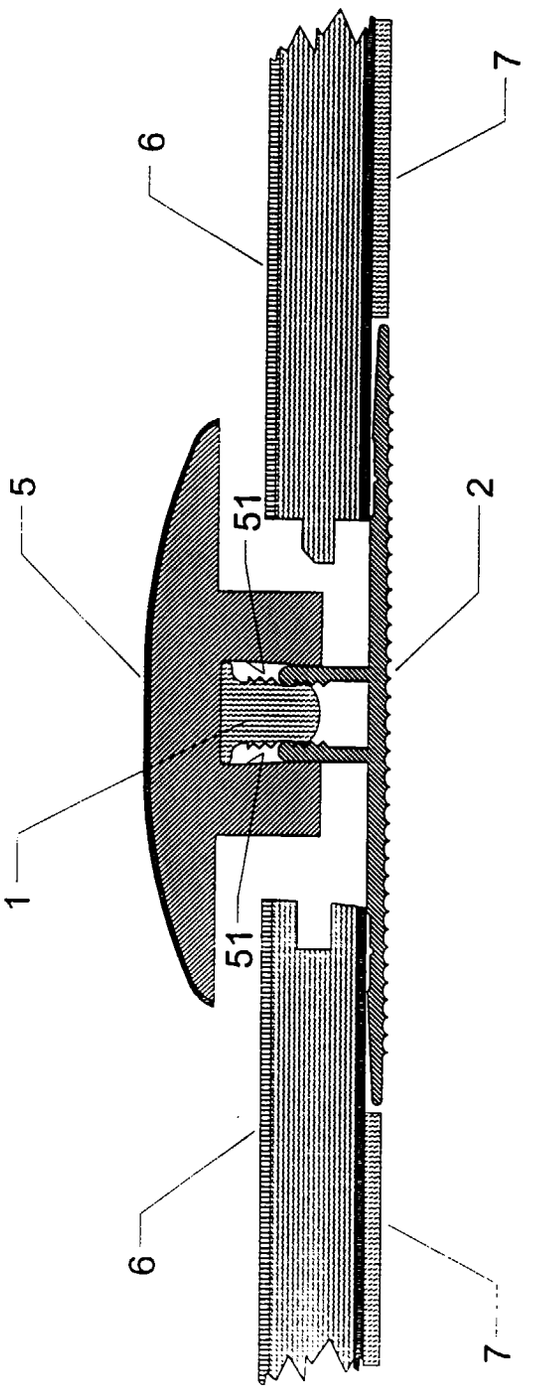

Figure 3

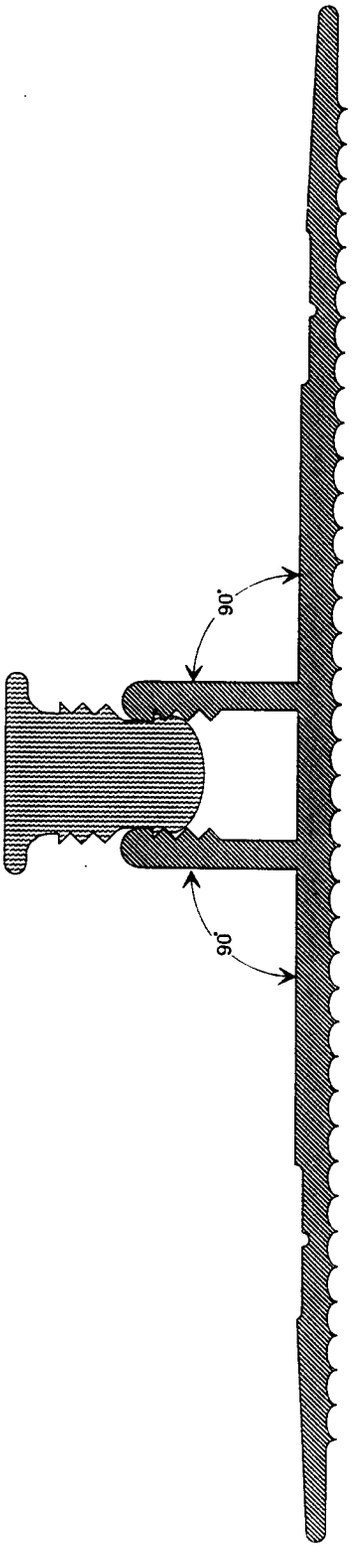

Figure 4

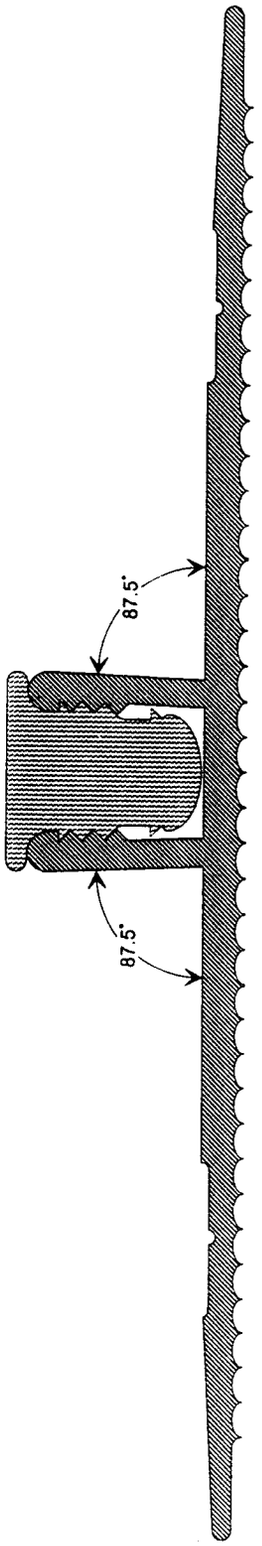

Figure 5

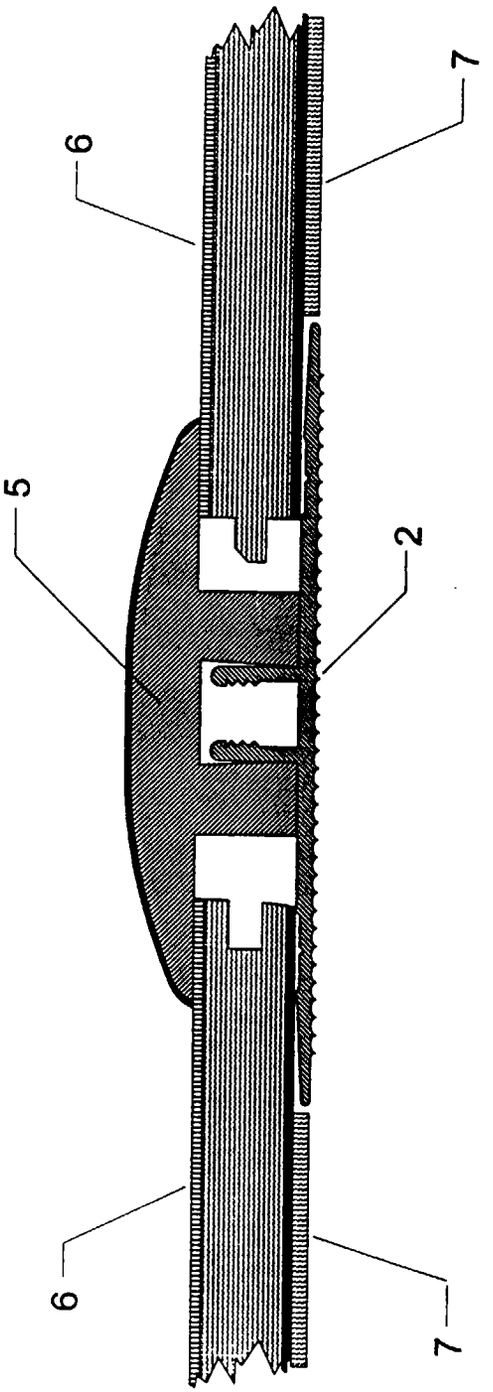

Figure 6

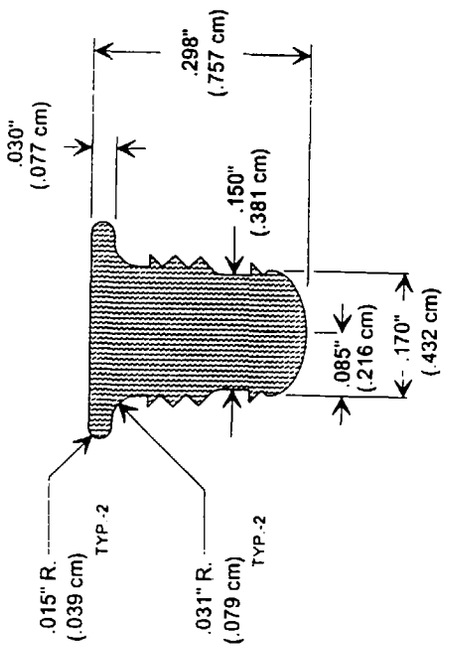
.030"
(.077 cm)
.298"
(.757 cm)
.150"
(.381 cm)
.085"
(.216 cm)
.170"
(.432 cm)
.015" R.
(.039 cm)
TYP.-2
.031" R.
(.079 cm)
TYP.-2

Figure 7

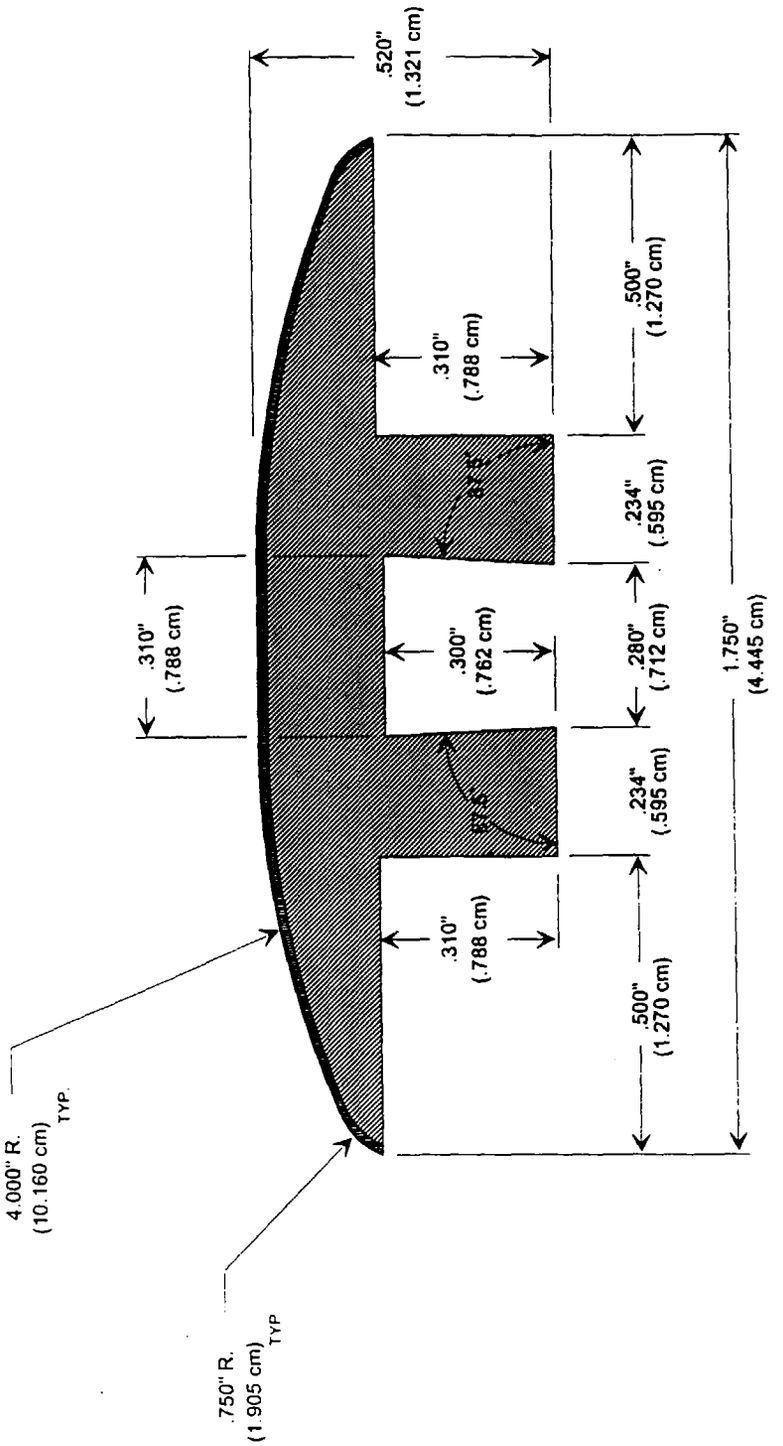
.520"
(1.321 cm)
.310"
(.788 cm)
.500"
(1.270 cm)
.234"
(.595 cm)
.310"
(.788 cm)
.300"
(.762 cm)
.280"
(.712 cm)
1.750"
(4.445 cm)
.234"
(.595 cm)
.310"
(.788 cm)
.500"
(1.270 cm)
4.000" R.
(10.160 cm)
TYP.
.750" R.
(1.905 cm)
TYP

Figure 8

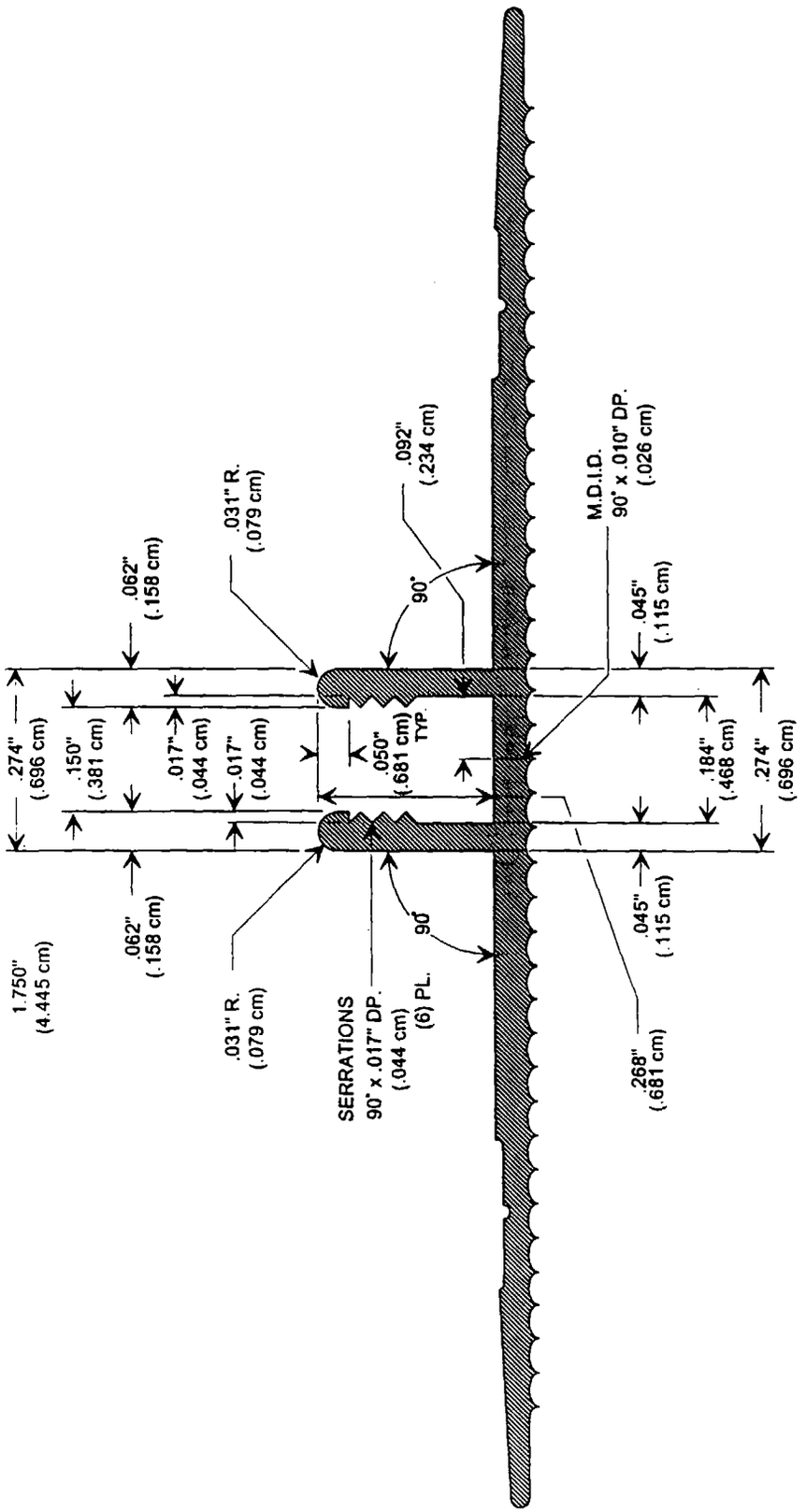
.062" (.158 cm)
.031" R. (.079 cm)
.092" (.234 cm)
M.D.I.D. 90° x .010" DP. (.026 cm)
90°
.045" (.115 cm)
.274" (.696 cm)
.150" (.381 cm)
.017" (.044 cm)
.017" (.044 cm)
.050" (.681 cm) TYP.
.184" (.468 cm)
.274" (.696 cm)
1.750" (4.445 cm)
.062" (.158 cm)
.031" R. (.079 cm)
SERRATIONS 90° x .017" DP. (.044 cm) (6) PL.
90°
.045" (.115 cm)
.268" (.681 cm)

Figure 9